

PATENT

REMARKS

Claims 1-26 are pending in the present application. In the above amendments, claims 1-3, 5, and 11-12 have been amended, and claims 13-14, 17, and 19-26 have been canceled without prejudice. Claims 15, 16, and 18 have been allowed.

In the Office Action mailed July 6, 2005, the Examiner rejected claim 1 under 35 U.S.C. §103(a) as being unpatentable in view of Fagan (hereinafter "Fagan") (GB 2,229,333A) in view of Prentice et al. (hereinafter "Prentice") (US 6,763,228 B2). The Examiner rejected claims 3, 6, and 11-12 under 35 U.S.C. §103(a) as being unpatentable over Ruelke (hereinafter "Ruelke") (US 6,459,889 B1) in view of Prentice. The Examiner rejected claim 2 under 35 U.S.C. §103(a) as being unpatentable over Fagan in view of Prentice, and further in view of Becker et al. (hereinafter "Becker") (US 5,612,975) and Webster et al. (hereinafter "Webster") (US 6,748,200 B1). The Examiner rejected claims 4-5, 13-14, 17, and 19-22 under 35 U.S.C. §103(a) as being unpatentable over Ruelke in view of Prentice, and further in view of Dutkiewicz et al. (hereinafter "Dutkiewicz") (US 5,629,960). The Examiner rejected claim 7 under 35 U.S.C. §103(a) as being unpatentable over Ruelke in view of Prentice, and further in view of Sutterlin et al. (hereinafter "Sutterlin") (US 5,463,662). The Examiner rejected claim 8 under 35 U.S.C. §103(a) as being unpatentable over Ruelke in view of Prentice and Sutterlin, and further in view of Heck et al. (hereinafter "Heck") (US 5,483,691). The Examiner rejected claim 9 under 35 U.S.C. §103(a) as being unpatentable over Ruelke in view of Prentice, Dutkiewicz, and further in view of Sutterlin. The Examiner rejected claim 25 under 35 U.S.C. §103(a) as being unpatentable over Fagan in view of Prentice and Kotzian, and further in view of Wilson (hereinafter "Wilson") (US 5,627,857).

Applicant respectfully responds to this Office Action.

Applicant refers to the remarks included in the previous amendment dated 3/28/05. These remarks continue to be applicable. Nonetheless, to reduce the issues under consideration, and speed the application toward allowance, applicant has introduced several amendments, detailed below, and canceled claims 13-14, 17, and 19-26 without prejudice. Applicant will

PATENT

defer the pursuit of the subject matter of the claims prior to amendment, and the cancelled claims, to a future application.

Applicant respectfully traverses the Examiner's rejections. To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation of, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference(s) must teach or suggest all the claim limitations. For each §103(a) rejection in this Office Action, Applicants submit: the prior art of record does not provide a suggestion or motivation to modify the reference; there is not a reasonable expectation of success, and the reference does not teach or suggest all the claim limitations. Some examples for the currently pending claims are detailed below. Substantive response to the rejections of cancelled claims or claims prior to amendment will be deferred until such time as the Applicant pursues the related subject matter.

Applicant respectfully traverses the rejection of claim 1. Claim 1 has been amended to incorporate portions of the previous claim 2. In the amendment to claim 1, the DC offset canceller is interposed. This amendment clearly distinguishes from the combination of Fagan in view of Prentice.

In addition Applicant respectfully traverses the Examiner's rejection of this element, as discussed in the rejection of the prior claim 2, based on Becker and Webster. This traversal is also applicable to the amended claim 2, detailed below. Becker teaches a traditional heterodyne receiver, in contrast to the recited claim. Applicant notes that Becker fails to teach a DC offset canceller interposed as recited in the claim. Note that, as recited, the gain controller is adapted to control the gains of the analog and digital VGAs. By contrast, in Becker, the only DC bias removal (i.e. 235) is interposed between AGC 206 and independent post detection AGCs 246. There is no gain controller adapted to control the Becker VGAs. Note that DC bias removal 235 is not interposed between AGC 206 and wideband AGC 280. Thus Becker does not teach the elements recited in claim 1.

With regard to the other references, Fagan is silent as to DC offset. Prentice, as acknowledged by the Examiner, stands for the premise of using direct conversion, thus teaching away from the use of the heterodyne architecture of Becker. The Examiner asserts that Prentice

PATENT

also fails to teach a DC offset canceller interposed as recited. Thus, the combination of the three references fails to teach or suggest each of the claim limitations, as recited in the claim. Furthermore, other than the Examiner's conclusory statement about an obviousness to combine, no evidence is given in any of the references as a motivation to combine any of them. Thus, claims 1 and 2 should be allowed.

The prior claim 1 was unduly limited by the term "adapted to measure a signal output from the digital variable gain amplifier", which has been replaced by "adapted to measure a signal strength." Support for this amendment may be found throughout the specification, examples include paragraphs [0066], [0071], [0072], and others.

Claim 1 is further amended, in this application, to be more specifically directed to embodiments between which the gain is essentially constant between the output of the analog VGA and the input to the digital VGA, in which the DC offset canceller is interposed. Various benefits of this configuration are detailed in the specification. None of the cited references, nor combinations thereof, teach or suggest the limitations of the currently amended claim 1, and allowance is requested.

Claim 2 is amended to independent form including the limitations of the prior claim 1, with the exception that the term "adapted to measure a signal output from the digital variable gain amplifier" has been replaced by "adapted to measure a signal strength", as described above with respect to claim 1. The traversal detailed above with respect to Fagan, Prentice, and Becker is applicable here as well, and on that basis the claim is allowable. In addition, the Examiner characterizes Webster as teaching an AGC loop whose gain is varied according to an operating mode of the DC offset canceller. Applicant does not find in the Examiner's cited portions of Webster, nor in the remaining portions of the patent, such a teaching. Applicant respectfully traverses this rejection as well, as Webster does not teach varying an AGC gain according to an operating mode of a DC offset canceller. None of the cited references, nor combinations thereof, teach or suggest the limitations of the currently amended claim 2, and allowance is requested.

Applicant respectfully traverses the rejection of claims 3, 11, and 12, as well as dependent claims thereof. Ruelke has been mischaracterized as teaching a plurality of operating modes for a DC loop. Rather, Ruelke teaches a single DC offset correction loop, and does not specify a plurality of modes for that loop. Ruelke teaches differing sequences in which the DC offset

PATENT

correction loop is used, without reference to changing its mode of operation. It is the radio receiver of Ruelke, not its DC offset correction loop, that operates in differing modes. See the Examiner's citation of Ruelke claim 12, in which a DC offset correction loop is nested within an AGC loop, and a controller implementing "a DC offset correction sequence according to an operational protocol of the radio receiver" (Emphasis added.) Ruelke defines two of these sequences, in which the DC offset correction loop is not taught as utilizing anything other than a single mode. These are simply different procedures used in differing operating modes of the receiver. By contrast, support for Applicant's claim 3 is given throughout the specification. For one example of a plurality of DC operating modes, see paragraphs [0047] and [0048]. Thus, a combination of Ruelke and Prentice would fail to set forth the limitations of the claims. Furthermore, no evidence of a motivation to combine the references is provided. As such, allowance of claim 3 is requested.

The previous amendment to claim 3, introducing the limitation "during direct conversion of RF signals" has been removed, as none of the cited references, nor any of the combinations thereof, teach or suggest the limitations of this claim.

The above argument with respect to Ruelke and Prentice apply to dependent claims 4-10 as well as to claims 11 and 12.

In claims 3, 5, 11, and 12, the term "desired" as a modifier for the term "signal" has been removed to clarify the claims. For example, the signal on which operations are performed may include components other than the ultimately desired signal, i.e., introduced DC offset may not be considered "in" a "desired" signal. Removal of this term serves to better define and clarify the claims. None of the cited references, nor combinations thereof, teach or suggest the limitations of the currently amended claim 3 or any of its dependent claims, or of claims 11 and 12. Allowance is requested.

REQUEST FOR ALLOWANCE

In view of the foregoing, Applicant submits that all pending claims in the application are patentable. Accordingly, reconsideration and allowance of this application are earnestly

PATENT

solicited. Should any issues remain unresolved, the Examiner is encouraged to telephone the undersigned at the number provided below.

Respectfully submitted,

Dated: 1/6/06

By: 

George C. Pappas, Reg. No. 35,065
858-651-1306

QUALCOMM Incorporated
5775 Morehouse Drive
San Diego, California 92121
Telephone: (858) 651-4125
Facsimile: (858) 658-2502

Attorney Docket No.: 010161
Customer No.: 23696